

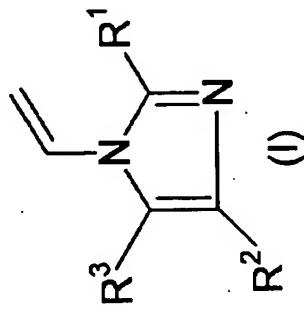
<b>2004-526591/51</b>	A96 D21 (A11 A14 A25)	<b>BADI 2002.12.20</b> *DE 10261197-A1	A(12-V4) D(8-B)
BASF AG 2002.12.20 2002-1061197(+2002DE-1061197) (2004.07.08) C08L 39/00, A61K 7/00, 7/06	<b>High solids, low viscosity aqueous dispersions especially for use in cosmetics contain a polymer of an N-vinyl monomer, together with polymeric dispersing and precipitation agents and a crosslinker</b>	<b>INDEPENDENT CLAIMS</b> are also included for (i) production of the dispersions; and (ii) aqueous solutions obtained by dilution of the dispersions with water.	
<b>C2004-193743</b> Addnl. Data: CHRISSTOFFELS L, HOESSEL P, LEDUC M, WOOD C, ANGEL M, MATHAUER K		<u>USE</u> As a thickener or conditioner or in increasing the viscosity of a preparation by adding the aqueous dispersion and (especially >2 wt.%) water and in cosmetics (claimed).	
	<u>NOVELTY</u>	<u>ADVANTAGE</u> The dispersions are especially suited to use as conditioners in hair cosmetics such as shampoos, having a high solids content and low viscosity and giving good properties such as combability.	
	Aqueous dispersions are new when produced from the following ingredients with the wt. ratio (B) : (C) being 1 : 0.02-50 : (a) an N- vinyl monomer; (b) a polymeric dispersant; (c) a polymeric precipitation agent; (d) a crosslinker; and optionally also (e) further monomers; (f) a regulator; and/or (g) a buffer.	<u>EXAMPLE</u> An aqueous dispersion of solids content 39.9 wt.% and viscosity 650 mPas was obtained by (i) adding N-vinylimidamide (180 g), N-vinyl-2- methylimidazolium methyl sulfate (44.4 g, 45% aqueous solution) and triallylamine (0.6 g) to a homogeneous solution of water	<u>DE 10261197-A+</u>
			<u>DE 10261197-A+</u>
		<b>DETAILED DESCRIPTION</b>	

(575.7 g), sodium dihydrogenphosphate dihydrate (2 g), polyvinyl pyrrolidone (6 g; K value 90), polyvinyl pyrrolidone (10 g; K value 17), and polyethylene glycol (180 g; molecular weight 1500) and setting the pH to 6.75 with 25% caustic soda; (ii) adding Wako V50 (RTM : 2,2'-azobis-2-(aminopropane)dihydrochloride) (1 g) and polymerizing for 4 hours at 55°C; and (iv) adding further Wako V50 (RTM) (0.24 g) and polymerizing for 2 hours at 65°C.

#### TECHNOLOGY FOCUS

Polymers - Claimed Preparation : Involves reacting (A) - (D) and optionally also (E) and (G) in presence of regulator (F) with the (B) : (C) ratio being 1 : 0.02-50. Preferred Composition : The wt. ratio (B) : (C) is 1 : 0.05-20 and the weight ratio ((B) + (C)) : other monomers is 10 : 1-1 : 0.1. The obtained dispersion is optionally hydrolyzed, especially to an amine content in the polymer of below 20 mol.-% based on monomer (A). Preferred Materials : Monomer (A) is an N-vinylamide or N-vinyllactam, while dispersant (B) is polyvinyl acetate, polyalkylene (especially polyethylene) glycol, polyvinyl alcohol, polyvinyl pyridine, polyethylene imine, polyvinyl imidazole, polyvinyl succinimide and polydiallyldimethyl ammonium chloride, polyvinyl pyrrolidone (PVP), polymers containing >5 wt.-% vinyl pyrrolidone (VP) units, polymers containing >50 wt.-% vinyl alcohol

units, optionally chemically-modified oligo- or poly-saccharides (especially carboxymethylcellulose), oxidatively-, hydrolytically- or enzymatically-degraded polysaccharides, water-soluble starch or derivatives, starch esters, starch xanthogenates, starch acetates and/or dextran, especially PVP and/or polymers containing >5 wt.-% VP units. Precipitation agent (C) is a water-soluble polyether-containing compound, especially of formula (I) and, in particular, polyethylene glycol of molecular weight 300-100000, especially 1000-10000.



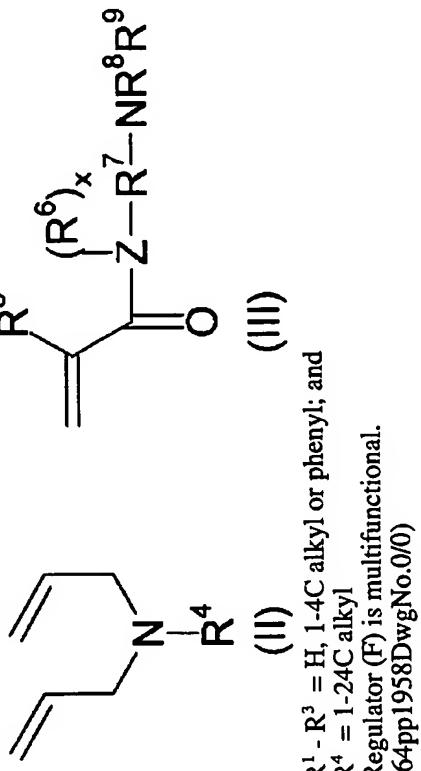
R<sup>1</sup> = H, 1-24C alkyl, R<sup>6</sup>-CO-, R<sup>6</sup>-NHCO- or polyalcohol residue;

| DE 10261197-A1/1

2004-526591/51

$R^2, R^4 = -(CH_2)-2,4\text{-}CH_2CH(R^6)$ - or  $-CH_2\text{-CHOR}^7\text{-CH}_2$ ;  
 $R^5$  and  $R^7$  = as for  $R^1$  but excluding polyalcohol residues;  
 $R^6 = 1\text{-}24C$  alkyl;  
 $A = -COO-$ ,  $-CO\text{-}B\text{-}COO-$ ,  $-CH_2CH(OH)\text{-}B\text{-}CH(OH)\text{-}CH_2\text{-}O-$ ,  
 $\text{CONH}\text{-}B\text{-NH}\text{-}COO-$  or  $C(R^{30})(R^{31})\text{-}O$ ;  
 $B = -(CH_2)^r$  or arylene, optionally substituted;  
 $R^{30}$  and  $R^{31} = H$ ,  $1\text{-}24C$  alkyl or hydroxyalkyl, benzyl or phenyl;  
 $n = 1$  when  $R^1$  is not polyalcohol and  $1\text{-}1000$  when  $R^1$  is polyalcohol;  
 $s = 0\text{-}1000$ ;  
 $t = 1\text{-}12$ .  
 $u = 1\text{-}5000$ ; and  $v$ ,  $w$ ,  $x$  and  $y = 0\text{-}5000$

Further monomers (E) are cationic or quaternizable monomers, especially N- substituted diallylamine of formula (II) or N-vinylimidazole derivatives of formula (III)



$R^1 - R^3 = H$ , 1-4C alkyl or phenyl; and  
 $R^4 = 1\text{-}24\text{C alkyl}$   
Regulator (F) is multifunctional.  
(64pp1958DwgNo.0/0)

$R_1 = R_2 = R_3 = R_4 \equiv H$ , 1-4C alkyl or phenyl; and

R<sub>c</sub> ≈ 1.24 C<sub>alkyl</sub>

Regulator (F) is multifunctional.

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$\alpha = 1 - 3000$ , and  $\nu, w, x$  and  $y = 0-3000$ . Further monomers (E) are cationic or quaternizable monomers, especially N- substituted diallylamine of formula (II) or N-vinylimidazole derivatives of formula (III)

| DE 10261197-A12